UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

3D SYSTEMS, INC., Plaintiff, v. **ENVISIONTEC, INC., ENVISIONTEC GMBH**, and **SIBCO, INC.**, Defendants.	Case No. 2:05-cv-74891 Hon. Avern Cohn

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[DEFENDANTS' PROPOSED]

JURY INSTRUCTIONS ON THE LAW OF THE CASE

LAW OF THE CASE INSTRUCTION NO. 1

As you saw and heard in the film, the United States Constitution provides for patents to afford legal protection for inventions. Whoever invents or discovers a new and useful device or a new and useful improvement to an old or existing device may obtain a United States patent if he or she meets the requirements of the law for obtaining a patent.

The purpose of the United States patent system is to promote progress in the useful arts. Progress is promoted by requiring the inventor to disclose, or tell the public, all of the information that is needed to enable someone who is skilled in that field to use the invention, and the best way contemplated by the inventor for carrying out his or her invention when the patent application was filed. The latter are called preferred embodiments in the patent. In exchange for that public disclosure, the inventor gets the right to keep anyone else from making, using, or selling the patented invention within the United States for 20 years. At the end of the 20 year period, the invention becomes a part of what is called the "public domain," which means that anyone is free to use it. Because patents are territorial in nature, a United States patent has no force outside the United States.

LAW OF THE CASE INSTRUCTION NO. 2

As you know, this is a patent case. It involves three U.S. Patents, Nos. 5,630,981, 5,651,934, and 5,902,537. Patents are often referred to by their last three digits. The patents in this case have be referred to as the '981 Patent, the '934 Patent, and the '537 Patent.

The '981 Patent relates to stereolithography generally, and more particularly to a process of building parts and prototypes from computer-aided design, or CAD, files representing the object to be built. The CAD files are converted into data representing adjacent layers of the

object to be built, and the part is then created by exposing the building material to light in response to the data.

The '934 Patent relates to a "winged blade" used in a stereolithography machine. The winged blade has a plurality of separate members (namely more than one) on a lower surface, which contact the building material and form a uniform, i.e., a smooth, level coating of the building material over previously formed layers of the object.

The '537 Patent relates to an applicator used in a stereolithography machine. The applicator applies or dispenses, and smoothes uncured building material and includes a mechanism in the form of a motor-driven threaded drive shaft, for sweeping the applicator across at least some of the previously solidified object layers.

During the trial the parties offered testimony to familiarize you with this technology.

LAW OF THE CASE INSTRUCTION NO. 3

3D Systems has asserted that Envisiontec's Perfactory and Vanquish machines infringe claim 11 of the '981 Patent, and that the Vanquish machine also infringes claim 2 of the '934 Patent and claim 81 of the '537 Patent. Defendants contend that the Perfactory and Vanquish machines do not infringe any of these claims.

In this case, your job is to compare certain claim elements of each of the three asserted claims to the accused machines and to determine whether the machines have the characteristics described in the particular claim elements at issue. If they do, then it is said that the claim element is present in the accused machine or process. Another expression you may have heard during the course of the trial is that the claim element is "met" by the accused machine or process.

LAW OF THE CASE INSTRUCTION NO. 4

As to the '981 Patent, you have to decide whether two of the claim elements are present in the Perfactory and Vanquish machines.

For the first element at issue, you will be asked to decide:

Whether, as required by claim 11, the Perfactory and Vanquish machines provide data representing adjacent cross sectional layers of the three dimensional object to be formed which was generated on a CAD system.

As to the second element at issue in the '981 Patent, you will be asked to decide:

Whether, as required by claim 11, the Perfactory and Vanquish machines expose the medium (photopolymer) to the prescribed radiation (light) in response to the data representing adjacent cross-sectional layers of the three-dimensional object to be formed.

LAW OF THE CASE INSTRUCTION NO. 5

As to the '934 Patent, you have to decide whether two of the claim elements are present in the Vanquish machines.

For the first element at issue, you will be asked to decide:

Whether, as required by claim 2, the Vanquish machine operates to form a smooth level coating of uncured building material of desired layer thickness over a previously formed layer.

As to the second claim element at issue in the '934 Patent, you will be asked to decide:

Whether, as required by claim 2, the Vanquish machine has a winged blade which has a plurality of substantially separate members on a lower surface thereof that contacts the building material.

LAW OF THE CASE INSTRUCTION NO. 6

Finally, as to the '537 Patent, you have to decide:

Whether, as required by claim 81, the cooling blades of the Vanquish machine apply or dispense uncured building material.

As to the second claim element at issue in the '537 Patent, you will be asked to decide:

Whether, as required by claim 81, the Vanquish machine has means (a motor-driven drive shaft or structural equivalent) for sweeping the applicator across at least a portion of at least some of the previously formed object cross-sections.

You will note that the second claim element of the '537 Patent is expressed in a special format known as "means-plus-function" format. Namely, the language used in this claim element is expressed as "means for sweeping the applicator …."

For this means-plus-function element to be met, you must determine whether the identical function recited in this claim element is performed by the accused structure of the Vanquish machine. In this regard, I have determined that, as matter of law, the function is "sweeping the applicator across at least a portion of at least some of the previously formed object cross-sections."

You must also determine whether the accused structure in the Vanquish, namely a motor-driven belt and pulley system, is identical or equivalent to the structure disclosed in '537 Patent for performing the function of sweeping the applicator across at least a portion of at least some of the previously formed object cross-sections. In this regard, I have found that the structure disclosed in the '534 Patent for performing that function is "a motor-driven threaded shaft."

In connection with deciding whether the motor-driven belt and pulley system in the Vanquish is an equivalent to a motor-driven threaded shaft, you should consider whether the differences between the two systems are substantial or insubstantial in relationship to the claimed function of sweeping the applicator across at least some of the previously formed object cross-sections.

As to the third claim element at issue in the '537 Patent, you will be asked to decide:

Whether, as required by claim 81, the Vanquish machine has a means for supplying data descriptive or representative of adjacent cross-sectional layers of the object to be formed.

In this regard, I have determined as a matter of law that the “means for supplying data descriptive of the object” has been construed to mean “a computer or equivalent that supplied data that is descriptive or representative of adjacent cross sectional layers of the object.”

Finally, as to the fourth of the four elements of the '537 Patent, you will be asked to decide:

Whether, as required by claim 81, the Vanquish machine exposes layers according to the descriptive data to form at least a portion of the object from a plurality of object cross-sections.

LAW OF THE CASE INSTRUCTION NO. 7

(3D Systems' Position In Its Own Words)

In summary, 3D Systems' position in its own words is as follows:

First, for the '981 Patent, 3D Systems position is that in the Perfactory and Vanquish machines, the numbers 0 to 255, contained in the series of bitmaps used to control the amount of light applied to the building material for each successive layer, do in fact constitute "data" representing the adjacent cross-sectional layers of the three dimensional object to be formed which was generated on a CAD system. Thus, two claim elements at issue in the '981 Patent are met by both the Vanquish and Perfactory machines.

Second, for the '934 Patent, 3D Systems position is that the cooling blade of the Vanquish machine is a winged blade which has a plurality of substantially separate members on its lower surface which contact the building material, and that the cooling blade operates to form a smooth level coating of uncured building material of desired layer thickness over previously formed layers. As such, both claim elements at issue in the '924 Patent are met by the Vanquish machine.

Third, for the '537 Patent, 3D Systems position is that the cooling blade of the Vanquish machine dispenses uncured building material, and that the Vanquish machine includes a belt and

pulley system which is an equivalent of a motor-driven threaded drive shaft for sweeping the cooling blade across at least a portion of at least some of the previously formed object cross-sections. As such, both claim elements of the '537 Patent are met by the Vanquish machine.

(Defendants' Position In Its Own Words)

First, for the '981 Patent, Envisiontec's position is that the Perfactory and Vanquish machines do not provide data representing adjacent cross-sectional layers. Nor does it use data representing adjacent cross-sectional layers during operation. Instead, both the Perfactory and Vanquish machines use a build volume and voxelization process, which subdivides an entire build volume into individual and unique voxel volumes. The curing depths of each individual voxel volume are independent from one another, and the individual voxel volumes are not organized into cross-sectional layers of the object to be formed. A digital light projector (DLP) uses the individual voxel volumes to project a uniquely assigned light intensity to each location on the resin surface. It is also Envisiontec's position that 3D Systems has previously distinguished voxelization from using the slice or layer data that is described in the '981 patent.

Thus, the two claim elements at issue in the '981 Patent are not met by either the Vanquish or the Perfactory machine because no cross-sectional layer data is provided by the machines, nor do the machines use cross-sectional layer data.

For the '934 Patent, Envisiontec's position is that the cooling blade of the Vanquish machine does not operate to form a smooth level coating of uncured building material of desired layer thickness over previously formed layers. Because the curing process is an exothermic reaction, significant heat is generated when the resin cures. The cooling blade periodically moves across the upper surface of the resin to dissipate this heat during a normal build operation.

However, the cooling blade does not smooth the surface of the resin. Indeed, the formation of a smooth, level coating requires a process in which the build platform is stopped periodically to allow the viscous liquid to be leveled. However, the Vanquish build platform never stops moving during a build operation, and therefore it is not possible to form a smooth level surface of liquid as movement of the platform will continuously disrupt the surface of the liquid.

Thus, the two claim elements at issue in the '981 Patent are not met by the Vanquish machine because the build platform never stops moving, and the cooling blade does not smooth the surface of the resin.

For the '537 Patent, Envisiontec's position is that the cooling blade of the Vanquish machine does not apply or dispense uncured building material. The cooling blade dissipates heat, but does not dispense material. Further, the belt and pulley system that operates the cooling blade of the Vanquish machine is not equivalent to a motor-driven threaded drive shaft. The Vanquish machine includes a dual belt drive that differs substantially from a threaded drive shaft in that the flexibility of the belts allows them to absorb vibrational energy generated by the motor, thereby reducing the amount of any such vibration that is transmitted to the resin or build platform via the cooling blade. This is substantially different than motor-driven threaded drive shaft that does not have any flexibility for absorbing vibrational energy.

As previously mentioned regarding the '981 Patent above, the Vanquish machine also does not provide data representing adjacent cross-sectional layers, let alone use such data in operation of its device. Instead, the voxelization process uses unique voxel volumes. The voxel volumes are not organized into cross-sectional layers of the object to be formed. A digital light projector (DLP) uses the individual voxel volumes to project a uniquely assigned light intensity to each location on the resin surface. Again, it is Envisiontec's position that 3D Systems has

previously distinguished voxelization from using the slice or layer data that is described in the '537 patent.

Thus, none of the four claim elements at issue in the '537 Patent are present in the Vanquish machine because (1) the cooling blade does not dispense material; (2) the belt and pulley system substantially differs from to a motor-driven threaded drive shaft; and (3) the voxelization process does not use data representing adjacent cross-sectional layers.

DEFENDANTS' PROPOSED LAW OF THE CASE INSTRUCTION NO. 8

(Estoppel)

"Estoppel" is a legal term that prevents someone from claiming or denying a fact because of his own previous actions or words to the contrary.

Before a patent is issued, it is examined by an Examiner at the United States Patent and Trademark Office. This process is sometimes referred to as "prosecution." A copy of everything that has been filed in the United States Patent Office and everything that has been mailed from the Patent Office during the prosecution of the patent application is referred to as prosecution history. This prosecution history includes all representations made by the inventors and/or their patent agent to convince the patent examiner to grant the patent. These representations include amendments to the claims and arguments made to convince the patent examiner that the claimed invention was novel and non-obvious. All of these representations are a matter of public record.

Claims that have been narrowed, by amendment or by argument, to avoid certain subject matter and obtain the issuance of a patent cannot be expanded later to encompass the subject matter it avoided. This is referred to as "Prosecution History Estoppel".

A party may offer into evidence any oral or written statement made by an opposing party outside the courtroom.

In considering the evidence you may decide the impact, if any, that 3D's statements made in the prosecution history of U.S. Patent No. 5,137,662 to distinguish between systems that convert CAD/CAM data into defined data points that translate into cubic voxels and stereolithography, have on its infringement assertions of the patents-in-suit.

[Authority: Adapted from: Model Patent Jury Instructions prepared by The National Jury Instruction Project, June 17, 2009; Section 1.1, pp. 4-5; FRE 803; DN153, pp. 19-20].